

Before the
Federal Communications Commission
Washington, D.C. 20554

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In the Matter of

Amendment of Part 95 of the Commission's
Rules to Provide Regulatory Flexibility in the
218-219 MHz Service

WT Docket No. 98-169
RM-8951

REPLY COMMENTS OF PHOENIX DATA COMMUNICATION, INC.

Phoenix Data Communication, Inc. ("Phoenix"), by its attorneys, hereby replies to certain comments filed in the above-titled proceeding. Phoenix has received Federal Communications Commission ("FCC" or the "Commission") type acceptance of its Light Monitoring Unit ("LMU"), a microprocessor-controller street light photocontroller that operates in the 218-219 MHz band.

Phoenix applauds the Commission's attempt to relieve the 218-219 MHz Service from unnecessary regulation and supports the comments filed in support of the elimination of the automatic power control ("APC") requirement for RTUs with ERPs in excess of 100 milliwatts. In addition to the reasons in support of the elimination of the APC requirement articulated herein, Phoenix incorporates via this reference its Request for Waiver of Section 95.855 of the Commission Rules, filed November 24, 1997 ("Request for Waiver"). A copy of the Request for Waiver is attached hereto as Exhibit A.¹ As noted in the comments of Kingdom R. Hughes,

¹The attached Request for Waiver is an "Amended" version that was filed with the Commission on May 18, 1998. The Amended version reflects modifications to the Waiver Request that were necessary to eliminate the need for previously requested confidential treatment.

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“[w]ithout a doubt, the technical restrictions in the Commission’s rules have been the biggest impediment to licensees in their attempts to develop viable service offerings.”²

As noted by the 218-219 MHz Licensees and the In-Sync Interactive Corporation, the Commission should eliminate the APC restrictions in the 218-219 MHz service because the restrictions increase the cost of developing equipment without providing commensurate value to the public.³ In granting Phoenix a waiver of the APC requirement, the Public Safety and Private Wireless Division (the “Division”) recognized the burden imposed by the APC requirement and waived the restriction.⁴

In addition, as demonstrated by the LMU, the services envisioned for the 218-219 MHz service now are very different from those originally anticipated to be provided on the spectrum.⁵

²Comments of Kingdon R. Hughes, Richardson, Texas, Page 8. Also see the Comments of the Bay Area 218-219 MHz Group. (“The Commission’s new rules for the 218-219 MHz service must eliminate the unnecessary technical specifications that have stifled the growth and development of the service since its inception.”)

³Comments of the 218-219 MHz Licensees, Page 15; Comments of In-Sync Interaction Corporation, Page 13.

⁴Phoenix Data Communication, Inc., Request for Waiver of Section 95.855 of the Commission’s Rules, Order, 1998 FCC Lexis 2468, DA 98-972 (Pub. Safety and Priv. Wireless Division released May 21, 1998). The Dispatch Interactive Television Company opposes the elimination of the APC requirement for RTUs with ERPs in excess of 100 milliwatts because APC is a “sensible regulatory requirement” to ensure that operations in the 218-219 MHz spectrum do not interfere with TV Channel 13 operations. Dispatch Interactive Television Company submits that APCs represent only a minimal intrusion on system design while insuring that the services are provided efficiently without causing unnecessary interference. Comments of Dispatch Interactive Television Company, Page 7. As demonstrated in Phoenix’s Request for Waiver, the APC requirement is not a minimal intrusion on design of a system operating in 218-219 MHz spectrum: rather APC can unnecessarily increase the cost of a 218-219 MHz system to such an extent that the system is not financially viable, thereby precluding the use of an already underutilized spectrum band.

⁵In addition to the LMU, Community Teleplay, Inc. notes that it is about to deploy a 218-219 MHz system that will provide automatic vehicle tracking and other wireless data services. Comments

218-219 MHz equipment will not necessarily be in the same proximity to television receivers as it was anticipated when the Commission's rules were first promulgated. Both the 218-219 MHz Licensees and the In-Sync Interactive Corporation correctly note that the APC rule was adopted when the service was projected to be an interactive television service and RTUs would be co-located with television sets, that is, when the spectrum would be used for "set-top box"-type services. In its Waiver Order the Division recognized the extent to which 218-219 MHz systems have changed when it noted that systems such as Phoenix's LMU "are very different from those initially anticipated to be provided on IVDS spectrum."⁶

Finally, the APC is not necessary to ensure that operations in the 218-219 MHz band do not interfere with other lawful services. As noted by the Boston Spectrum Associates, L.L.C. and Houston Spectrum Associates, L.L.C., because of the 2 MHz spacing between Channel 13 and the 218-219 MHz band, it is extremely unlikely that any interference will occur. In addition, the Commission's rules already impose on 218-219 MHz licensees an absolute obligation to eliminate any unlawful interference with other services.⁷

of Community Teleplay, Inc., Page 1. In-Sync notes in its comments that it believes it will soon be able to provide cost-effective wireless monitoring and metering services to utilities, transportation businesses and local governments including: meter reading, management of traffic control systems, and sales data communication. Comments of In-Sync Interaction Corporation, Page 2.

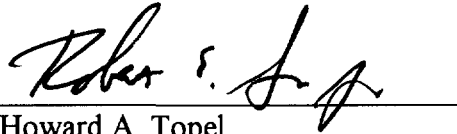
⁶Waiver Order at ¶6.

⁷47. C.F.R. § 95.861. See Comments of Boston Spectrum Associates, L.L.C. and Houston Spectrum Associates, L.L.C., Page 11. Several parties, including Dispatch Interactive Television Company and Community Teleplay, Inc. oppose the elimination of the APC requirement on interference grounds. As discussed above, the Dispatch Interactive Television Company opposes the elimination of the APC requirement for RTUs with ERPs in excess of 100 milliwatts because APC is a "sensible regulatory requirement" to ensure that operations in the 218-219 MHz spectrum do not interfere with TV Channel 13 operations. However, the APC requirement is not necessary to protect TV Channel 13 operations from interference from 218-219 MHz operators and only serves to

WHEREFORE, Phoenix Data Communication, Inc. supports the elimination from the FCC's rules of the APC requirement for RTUs with ERPs in excess of 100 milliwatts.

Respectfully submitted,

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increase unnecessarily the cost of a 218-219 MHz system to such an extent that the system is not financially viable. Community Teleplay, Inc. simply makes the unsupported statement that the APC requirement "reduces even further the possibility of interference to Channel 13." Comments of Community Teleplay, Inc., Page 17. The FCC's current rules provide adequate protection for TV Channel 13 operations and further restrictions are not necessary.

EXHIBIT A

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In Re

PHOENIX DATA COMMUNICATION, INC.

Request for Waiver of Section 95.855 of the
Commission's Rules.

File No. _____

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MAY 18 1998

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

AMENDED
REQUEST FOR WAIVER OF SECTION 95.855
OF THE COMMISSION'S RULES

Phoenix Data Communication, Inc. ("Phoenix"), by its attorneys, hereby files this amended request for waiver of Section 95.855 of the Commission's Rules.¹ On November 21, 1997, Phoenix filed an FCC Form 731 (the "Application") for Type Acceptance of an Interactive Video and Data Service ("IVDS") transmitter, along with an original request for waiver. The original Request for Waiver was accompanied by a Request for Confidential treatment of portions of that request. This amended request reflects modifications that eliminate the need for confidential treatment of the request, as amended.

Section 95.855 requires that all IVDS Remote Transmit Units ("RTUs") with power in excess of 100 milliwatts must incorporate automatic power control. Phoenix requests waiver of Section 95.855 of the Commission's Rules so that its IVDS transmitter may be Type Accepted with a variable power control instead of an automatic power control. In support thereof, Phoenix states as follows:

¹47 C.F.R. §95.855.

A petition for waiver of the Commission's Rules may be granted for good cause shown.² The Commission may exercise its discretion to waive a rule where particular facts would make strict compliance inconsistent with the public interest.³ The standard for waiver requires the party seeking the waiver to demonstrate that the rule is unjust as applied to the party, given the unique circumstances of the situation.⁴ Therefore, a waiver is appropriate when, as is the case here, special circumstances warrant a deviation from the general rule and such deviation would better serve the public interest than adherence to the general rule.⁵

As stated previously, Phoenix seeks a waiver of Section 95.855 as it pertains to its IVDS transmitter so that it may be Type Accepted with a variable power control instead of an automatic power control. Section 95.855 provides that:

Section 95.855 Transmitter effective radiated power limitation.

- (a) The effective radiated power (ERP) of each CTS and RTU shall be limited to the minimum necessary for successful communications. RTUs with powers in excess of 100 milliwatts must incorporate automatic power control to ensure the minimum ERP is used. No CTS may transmit with an ERP exceeding 20 watts. No fixed RTU may transmit with an ERP exceeding 20 watts. No mobile RTU may transmit with an ERP exceeding 100 milliwatts mean power.⁶

²47 C.F.R. §1.3.

³Northeast Cellular Tel. Co. V. FCC, 897 F.2d 1164, 1166 (D.C. 1990).

⁴WAIT Radio v. FCC, 418 F.2d 1153 (D.C. Cir. 1969). See also, Industrial Broadcasting Co. V. FCC, 437 F. 2d 680 (D.C. Cir. 1970).

⁵Northeast Cellular Tel. Co. V. FCC, 897 F.2d at 1166.

⁶47 C.F.R. §95.855(a).

As stated in the Commission's *Report and Order* that accompanied the promulgation of Section 95.855, "[a] principal concern regarding IVDS technical requirements is to ensure that IVDS systems do not cause interference to other services."⁷ Waiver of Section 95.855 of the Commission's Rules is justified in this case because (1) the public interest is better served by Type Accepting Phoenix's IVDS transmitter with variable, rather than automatic power control; and (2) the purpose of Section 95.855 of the Commission's Rules is still served by using variable power control instead of automatic power control.

The equipment that Phoenix seeks to Type Accept will operate in the IVDS frequencies -- frequencies that are currently significantly underutilized. The grant of this Waiver and the Application will benefit the public interest by facilitating the constructive use of the IVDS spectrum.

Phoenix's transmitter is part of a microprocessor-controlled street light photocontroller, or Light Monitoring Unit ("LMU"), that uses IVDS radio frequencies to report the status of the street light to a base radio receiver system. It has a twist-lock type plug and is normally slightly larger than the old photo controller devices it replaces. Besides turning the lamp on and off, based on the status of the photosensor, the LMU has a built-in wireless data transmitter that sends out a packet of data that reports the operational status of the lamp. It reports every time the lamp turns on or off, as well as the current being drawn by the lamp. The LMU also monitors the lamp throughout the night and, if there is a specified change in the current draw, the unit immediately reports the new current.

⁷Amendment of Part 95 of the Commission's Rules to Allow Interactive Video and Data Service Licensees to Provide Mobile Service to Subscribers, *Report and Order*, 11 FCC Rcd 6610, ¶ 18 (1996).

The radio data signals from each LMU are received by a Base Receive Site ("BRS") and forwarded to a Host Computer ("HC") for processing. If the HC detects an abnormal current draw by the lamp (either too high or too low), based on the statistically determined norm for that particular lamp, an alert is presented to the operator at the host site. The system also tracks the actual time each lamp is turned on or off. Use of this system will eliminate the need to physically inspect each lamp on a regular basis, since the base station will have a history of the status of each lamp in the locality. Also, the current being drawn from each lamp will be recorded to the base station database for power consumption analysis.

All transmissions between the LMU and the BRS are one-way from the LMU to the BRS. The LMU is equipped with only a transmitter, and the BRS is equipped with only a receiver. The LMU transmitter is designed with variable, although not automatic, power control. This permits the LMU to be configured to transmit at the minimum ERP necessary for successful communications. The LMU is equipped with a jumper that controls the transmitter output power and can be adjusted by the user. There are three settings for this jumper: 1) no jumper results in transmitter power of 100 mW; 2) position one (pin 1 to 2) results in transmitter power of 500 mW; and 3) position two (pin 2 to 3) results in transmitter power of 2.0 watts. Even at its highest transmitter power setting of 2.0 watts, the transmitter's ERP is only 10% of the maximum 20 watt limit permitted by the Commission's Rules.⁸

The use of the variable power control permits Phoenix's IVDS transmitter to be built and sold at a commercially viable price. Automatic power control would require both the LMU and the BRS to have transmit and receive capability in order to allow the LMU and BRS to

⁸See 47 C.F.R. §95.855(a).

communicate with each other to modulate the ERP of the LMU transmitter to the minimum necessary for successful communications. Building an otherwise useless receiver into the LMU would add at least \$35.00 per unit and make the transmitter prohibitively expensive. For example, it would cost the County of Los Angeles, with its 550,000 street lights, \$20 million more just to have automatic power control built into the units. In addition, incorporating a receiver into the LMU would increase its size, making it significantly larger than the photo controller that it would replace, thereby making mounting the unit more difficult.

) Furthermore, equipping the LMU transmitter with automatic power control would also require a transmitter to be built into each BRS. There would be no other need for the BRS to transmit to the LMU other than to permit the LMU and BRS to communicate with each other to modulate the ERP of the LMU transmitter to the minimum necessary for successful communications. This requirement would not only unnecessarily increase the complexity of the system, but would also increase the overall number of transmissions. In this case, the automatic power control requirement would result in a two-way transmission system, when a one-way system is most efficient. Clearly, unnecessarily increasing the number and length of transmissions in an IVDS system does not further the Commission's goal of reducing the possibility that the equipment could interfere with other services, but instead works against the purpose of Section 95.855 of the Commission's Rules.

) Finally, the Commission's stated purpose for the rule, namely to prevent IVDS transmitters from interfering with other services, can also be accomplished through the use of the variable power control. Using variable power control, the configuration of the transmitter would be determined based on the minimum necessary power for the RTU to successfully communicate

with the base unit. Because the LMUs would be fixed rather than mobile, the minimum power required to ensure successful communication would be constant and would not fluctuate.

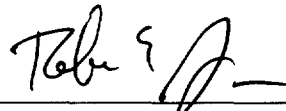
Through the use of a coverage map that would provide the minimum output setting necessary for each LMU to successfully communicate with the BRS, Phoenix would specify to the user the configuration of each LMU. Based on a coverage plan, which would be provided with each LMU system, units would be installed with either 100mW, 500 mW or 2 watt output power. In most cases, the 100mW setting would be sufficient since the units would be at least 25 feet off the ground and many will have relatively clear shots to the BRS antenna.

In addition, as stated in Section 2.0 (Description of Equipment Under Test) of the FCC Type Acceptance Report attached to the Application, the transmitter typically sends a data packet only twice a day, once each when the lamp turns on and off. The unit may also transmit once if there were a sudden change in current drawn by the lamp. In addition, the packet transmission time is less than 100 milliseconds. Furthermore, the highest power setting for the transmitter, 2.0 watts, is 10% of the maximum ERP permitted by Commission Rules and would only be used if the lower settings cannot ensure successful communications. In short, the LMU transmits at low power only a few times a day for an extremely brief period of time. As a result of the LMU's infrequent transmissions, extremely short packet transmission time, and the configuration of each LMU to ensure use of only the minimum power required to ensure successful communication, the LMU accomplishes the goal of Section 95.855 of the Commission's Rules, namely that the transmission will not interfere with other wireless services.

WHEREFORE, Phoenix Data Communication, Inc., requests a waiver of Section 95.855 of the Commission's Rules in order that the subject IVDS transmitter may be Type Accepted with variable, rather than automatic, power control.

Respectfully Submitted,

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